



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,321	09/25/2003	Hiroshi Nagasaka	ISHP:043	4143
6160	7590	08/10/2005	EXAMINER	
PARKHURST & WENDEL, L.L.P.			MULPURI, SAVITRI	
1421 PRINCE STREET			ART UNIT	
SUITE 210			PAPER NUMBER	
ALEXANDRIA, VA 22314-2805			2812	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.		Applicant(s)	
	10/669,321		NAGASAKA ET AL.	
	Examiner		Art Unit	
	Savitri Mulpuri		2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to the applicant's communication filed on 5/18/2005.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno Naohito (02-215166) in combination with Shioiri Hisatoku (US 61-070716) and Admitted prior art.

Mizuno et al teaches a strain gauge for detecting strain comprising: A metal substrate "1" with metal layer "11" of Cr-Ni-Cu of strain generating part to which strain is to be applied, an electrical insulating layer formed on strain generating part; an electrical insulating layer "31,32"; sensing elements formed on the electrical insulating layer, each of sensing elements being made of silicon "4" (see fig. Abstract and fig. 2)

With respect to claims 2, in Mizuno et al, it is not clear whether silicon is subjected annealing, at a temperature in the range of 540 C-590 C, to reduce specific resistance of the boron doped silicon.

Shioiri teaches using boron doped polycrystalline silicon, which is subjected annealing at 500-600 C to obtain specific resistance of in the order of 10^{-2} ohm-cm for strain gauge. (see abstract, page 3, right column, first paragraph). It would have been obvious to one of ordinary skill in the art to obtain specific resistance in the order of 10^{-2} ohm-cm to form sensor with improved mobility and concentration and excellent temperature characteristics (see abstract).

None of the references teach polycrystalline interfacing layer between polycrystalline layer and electrical insulating layer. However, it is well known to provide polycrystalline interface layer "33" between electrical insulating layer "31" and polycrystalline layer "32" (see fig. 8 in the admitted prior art). It would have been obvious to use polycrystalline interfacial layer in strain gauge for the benefit of measuring strain at high temperature such as at least 100 C (see instant specification (para 0010)).

Claim 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno Naohito (02-215166) in combination with Shioiri Hisatoku (US 61-070716). as applied to claims 1-3,5 above, and further in view of Ishikawa et al (US 2003/0102058) and Admitted prior art.

With respect to claim 3, though Mizuno et al teaches Cu-Ni-Cr as strain generating substrate "1,11", Mizuno et al do not teach martinsite precipitation hardened stainless steel of, which comprises from 3 to 5 wt.% Ni, from 15-17.5 wt. % Cr and from 3 to 5 wt.% of Cu.

Ishikawa et al teaches stainless steel in strain-induced martensitic phase, comprises which comprises from 3 to 5 wt.% Ni, from 15-17.5 wt. % Cr and from 3 to 5 wt.% of Cu. (see para 0049-0053). It would have been obvious to one of ordinary skill in the art to use stainless steel induced martensitic phase, comprises which comprises from 3 to 5 wt.% Ni, from 15-17.5 wt. % Cr and from 3 to 5 wt.% of Cu is soft stainless steel with excellent workability and no cracking.

Response to Arguments

Applicant's arguments filed 5/18/2005 have been fully considered but they are not persuasive. Applicant exclusively argues that the office action specifically cites to or applies Shioiri against claim 1. However, Shioiri was specifically applied to modify the teaching of primary reference by Mizuno by showing how annealing of doped poly silicon at a temperature in the range of 500- 600 C to result desired specific resistance in strain gauge with improved mobility, concentration and temperature characteristics (see previous office action , page 4, second paragraph).

Applicant argues that Admitted prior art teaches amorphous silicon layer as interface layer but not polycrystalline layer. Admitted prior art specifically teach annealing step crystallizes the amorphous amorphous silicon, which means amorphous layer becomes polycrystalline layer (see first paragraph line.3). In the above applied combination such crystallization is inherent during annealing step in the modified invention of Mizuno as modified by the teaching of Shioiri.

Inadvertently made inconsistencies in listing the claims, as brought by the applicant, are now corrected.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Savitri Mulpuri whose telephone number is 571-272-1677. The examiner can normally be reached on Monday to Friday 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2812

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Savitri Mulpuri
Primary Examiner
Art Unit 2812